

CLAIM AMENDMENTS

1 1. (currently amended) A method for performing, for the
2 benefit of a reference provider ~~(ISP)~~ (10) having a set of users
3 ~~[[C]]~~, connectivity evaluations over a data communication network
4 ~~, said evaluations being made in relation with respect to at least~~
5 one provider ~~[[ISP]]~~ of interest ~~(12, 14)~~, ~~characterized in that~~
6 ~~it includes the method comprising the steps of: [[-]]~~

7 selecting a plurality ~~[[T]]~~ of autonomous systems
8 ~~[[AS]]~~ capable of forming ~~at least one between~~ a traffic source
9 ~~[[and]]~~ or a traffic destination for the users ~~[[C]]~~ of said
10 reference provider ~~[[10]]~~ through the same reference provider
11 ~~[[10). -]]~~

12 supplying tables of BGP type ~~(BGP1, ..., BGPm)~~ containing
13 information on paths available on said data communication network
14 for the routing of said traffic with regard to the autonomous
15 systems ~~[[AS]]~~ of said plurality of systems, ~~[[-]]~~

16 extracting ~~[[104]]~~ from said tables the paths of BGP
17 type inherent to said at least one provider of interest ~~[[12,~~
18 ~~14]]~~, by finding out the paths that contain the respective number
19 of autonomous system ~~(AS number)~~ for said at least one provider of
20 interest ~~[[12, 14]]~~, ~~[[-]]~~

21 extracting ~~[[112]]~~ for each autonomous system ~~[[AS]]~~
22 of said plurality of systems ~~[[T]]~~, oriented sub-paths between
23 each of said autonomous systems ~~[[AS]]~~ and said at least one

24 provider of interest $[(12, 14)]$, by identifying for each sub-path
25 the relating respective length in number of hops, $[-]$

26 identifying, for each autonomous system $[(AS)]$ of said
27 plurality of systems $[(T)]$, at least one path between the forward
28 traffic volume $[(PI)]$ and the backward traffic volume $[(DI)]$
29 with regard to the users $[(C)]$ of said reference provider,
30 $[(10), -]$

31 determining $[(112)]$, for each of said sub-paths
32 respective connectivity contributions as a function of said
33 relative the respective length in number of hops and of said at
34 least one traffic volume $[(FI, DI), -]$

35 determining $[(118)]$, for each autonomous system
36 $[(AS)]$ of said plurality of systems, the total connectivity
37 values accumulating the connectivity contributions determined for
38 the oriented sub-paths extracted for each of said $[[each]]$
39 autonomous systems $[(AS)]$, and $[-]$

40 accumulating the total values of connectivity determined
41 for the autonomous systems $[(AS)]$ of said plurality of systems,
42 so as to obtain total connectivity values relating to said at least
43 one provider $[(ISP)]$ of interest $[(12, 14)]$.

1 2. (currently amended) The method according to claim 1
2 wherein the steps are carried out for a plurality $[(ASB)]$ of
3 providers $[(ISP)]$ of interest $[(12, 14)]$ present on said data
4 communication network.

1 3. (currently amended) The method as recited in claim
2 ~~2, characterized in that it comprises~~ further comprising the step
3 of

4 sorting the values of total connectivity obtained for the
5 providers of interest $[(12, 14)]$ of said plurality of systems in
6 at least one sorted list ~~(figure 6, figure 7)~~.

1 4. (currently amended) The method as recited in claim
2 ~~1, characterized in that wherein~~ it comprises the steps of: $[- -]$
3 identifying, for each autonomous system $[(AS)]$ of said
4 plurality of systems $[(T)]$, both the forward traffic volume
5 $[(FI)]$, and the backward traffic volume $[(DI)]$ with regard to
6 the users $[(C)]$ of said reference provider $[(10)]$, and $[-]$
7 determining $[(112)]$, for each of said sub-paths,
8 respective contributions of connectivity as a function of said
9 relating the respective length in number of hops and of both said
10 volumes of forward traffic $[(F1)]$ and backward traffic $[(DI)]$.

1 5. (currently amended) The method as recited in claim
2 ~~4, characterized in that it comprises~~ further comprising the step
3 of

4 generating values of total connectivity for said at least
5 one provider $[(ISP)]$ of interest $[(12, 14)]$ disaggregated into
6 values of total connectivity for forward traffic ~~(figure 7)~~ and
7 backward traffic ~~(figure 6)~~.

1 6. (currently amended) The method as recited in claim
2 ~~1, characterized in that it comprises~~ further comprising the step
3 of

4 submitting said tables of ~~[[BGGP]]~~ BGP type ~~(BGP1, ...,~~
5 ~~BGPm)~~ to a clean-up operation ~~(CL1, ..., CLm)~~ to eliminate the
6 comments contained in said tables.

1 7. (currently amended) The method as recited in claim
2 1, further comprising ~~characterized in that it comprises~~ the step
3 of

4 detecting said traffic volumes through a function
5 ~~[[CF]]~~ of NetFlow™ type .

1 8. (currently amended) The method as recited in claim 2
2 ~~, characterized in that it additionally comprises~~ further
3 comprising the step of

4 selectively reallocating the transit traffic through said
5 reference provider ~~[(10)]~~ on at least one part of said providers
6 ~~[(ISP)]~~ of interest ~~[(12, 14)]~~ of said plurality of systems
7 ~~[(ASB)]~~.

1 9. (currently amended) A system for performing for the
2 benefit of a reference provider ~~(ISP)~~ ~~(10)~~ having a set of users
3 ~~[(C),]~~ connectivity evaluations on a data communication network ~~,~~
4 ~~said evaluations being performed in relation~~ with respect to at

5 least one provider [[ISP]] of interest, the system comprising:

6 ~~[(12, 14)], characterized in that it comprises~~

7 tables of BGP type ~~(BGP1,..., BGPm)~~ containing
8 information on paths available on said data communication network
9 for the routing of traffic with regard to a plurality [[T]] of
10 autonomous systems [[AS]] capable of establishing at least one
11 between a source and a destination of traffic for the users [[C]]
12 of said reference provider [(10)] through the same reference
13 provider, [(10), -]

14 a detection module [[CF]] for detecting, for each
15 autonomous system [[AS]] of said plurality of systems [[T]], at
16 least one between the forward traffic volume [[F1]] and the
17 backward traffic volume [[DI]] with regard to the users [[C]]
18 of said reference provider [(10)], and [-]

19 a processing module [[S]] configured for: [-]

20 extracting [(104)] from said tables the paths of
21 BGP type inherent to said at least one provider
22 of interest [(12, 14)], by searching for the
23 paths that contain the respective number of
24 autonomous system ~~(AS-number)~~ for said at least
25 one provider of interest [(12, 14), -]

26 extracting [(112),] for each autonomous system
27 [[AS]] of said plurality of systems [[T],]
28 oriented sub-paths between said each autonomous
29 system [[AS]] and said at least one provider
30 of interest [(12, 14)], identifying for each

31 sub-path the relating respective length in
32 number of hops, [[-]]
33 determining [[(112),]] for each of said sub-paths
34 [[,]] respective connectivity contributions as
35 a function of ~~said relating~~ the respective
36 length in number of hops and of said at least
37 one traffic volume [[(FI,DI)]] with regard to
38 the users [[(C)]] of said reference provider
39 [[(10), -]]
40 determining [[(118),]] for each autonomous system
41 [[(AS)]] of said plurality of systems [[,]] the
42 total connectivity values accumulating the
43 connectivity contributions determined for the
44 oriented sub-paths extracted for each said
45 autonomous system [[(AS)]], and [[-]]
46 accumulating the total values of connectivity
47 determined for the autonomous systems [[(AS)]]
48 of said plurality of systems, so as to obtain
49 values of total connectivity relating to said
50 at least one provider [[(ISP)]] of interest
51 [[(12, 14)]].

1 10. (currently amended) The system as recited in claim
2 9, configured for performing connectivity evaluations for a
3 plurality [[(ASB)]] of providers [[(ISP)]] of interest [[(12, 14)]]
4 present on said data communication network.

5 11. (currently amended)]] The system as recited in
6 claim 10, ~~characterized in that it comprises further comprising~~
7 a sorting module for sorting the total connectivity
8 values obtained for the providers of interest ~~[(12, 14)]~~ of said
9 plurality of systems in at least one sorted list ~~(Figure 6, Figure~~
10 ~~7)~~.

1 12. (currently amended) The system as recited in claim
2 ~~9, characterized in that -- wherein:~~

3 said detection module ~~[(CF)]~~ is configured for
4 detecting for each autonomous system ~~[(AS)]~~ of said plurality of
5 systems ~~[(T)]~~, both the forward traffic volume ~~[(FI)]~~ and the
6 backward traffic volume ~~[(DI)]~~ with regard to the users ~~[(C)]~~
7 of said reference provider ~~[(10)]~~, and ~~[-]~~

8 said processing module ~~[(S)]~~ is configured for
9 determining ~~[(112)]~~, for each of said sub-paths, respective
10 connectivity contributions as a function of ~~said relating the~~
11 respective length in number of hops and of both said forward
12 traffic volume ~~[(F1)]~~ and backward traffic volume ~~[(DI)]~~.

1 13. (currently amended) The system as recited in claim
2 ~~12, characterized in that wherein~~ said processing module ~~[(S)]~~ is
3 configured for generating total connectivity values for said at
4 least one ISP of interest ~~[(12, 14)]~~, disaggregated into total
5 forward connectivity values ~~(Figure 7)~~ and total backward
6 connectivity values ~~(Figure 6)~~.

7 14. (currently amended) The system as recited in claim
8 ~~9, characterized in that it comprises~~ further comprising
9 pre-processing modules ~~(CL1, ..., CLm)~~ to submit said
10 tables of BGP type ~~(BGP1, ..., BGPm)~~ to a cleanup operation ~~(CL1,~~
11 ~~..., CLm)~~ to eliminate the comments contained in said tables.

1 15. (currently amended) The system as recited in claim
2 ~~9, characterized in that~~ wherein said detection module ~~[[CF]]~~ for
3 detecting said at least one traffic volume, includes a function
4 ~~[[CF]]~~ of NetFlow™ type.

1 16. (currently amended) The system as recited in claim
2 ~~10, characterized in that~~ wherein the providers of interest ~~[[12,~~
3 ~~14)]]~~ of said plurality of systems are equipped with a selective
4 re-balancing module for re-balancing the transit traffic through
5 said reference provider ~~[[10]]~~.

1 17. (currently amended) An information technology
2 product, directly loadable on the internal memory of a digital
3 computing unit and comprising portions of software codes capable of
4 implementing the method according to claim 1, when the product is
5 run on a computer.